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Law and Practice - European National Space Agencies under International Space Law

Frans von der Dunk

University of Nebraska - Lincoln, fvonderdunk2@unl.edu

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Frans G. von der Dunk

International Institute of Air and Space Law, Leiden University,
The Netherlands

Abstract

The legal place and role of national space agencies in general has not yet been the subject of much debate. This paper tries to argue however that this problem is of some relevance indeed. Concurrently with debating it namely, by concentrating on the case of some European agencies the problems of defining a "national space agency" and of the relevance of such definitions as to such a place and role will be answered to some extent.

Thus, Article VI of the Outer Space Treaty is seen as providing for a subdivision of space agencies in 'governmental agencies' and 'non-governmental entities'. The combination of legal and practical analysis, though undertaken only superficially in this paper, seems to put most agencies in the latter category, with due consequence in regard of international responsibility.

Similar consequences also arise in regard of Article VII of the Outer Space Treaty, which is found to provide for another relevant borderline, this time between national space agencies and private enterprise. Again, legal and practical analysis provides for some clues as to its relevance, this time in the field of international liability for damage.

Apart from the responsibility- and liability-problems thus dealt with in a space law-setting, both borderlines become relevant in regard of the general international legal doctrine of 'state immunity'. Of necessity, lack of law and practice in this regard make the conclusion a provisional and general one as to the problem of European national space agencies under international space law.

1. Introduction

Europe's venture into outer space uses a number of paths of considerable diversity. The role of the European Space Agency, an intergovernmental organization with 13 member states, an associated member and a (non-European) state linked to it by means of a cooperation agreement, has already often been discussed, both in regard to its political and in regard to its legal aspects¹.

Furthermore, growing attention is being paid to private enterprise active in space for commercial purposes, and their legal place in space². In EUTELSAT, EUMETSAT, and INTELSAT³ we even have examples of 'bodies' bearing characteristics of both. However, in space law neither international organizations nor private companies rule supreme; that role is still preserved for states⁴.

States in their turn are active in space in a number of ways. Depending on whether a certain activity is for military, scientific, public utility- or commercial reasons, most of the time those activities are actually undertaken by one ministry or another, at any rate by a state organ clearly identifiable as such. This is the case certainly for all states that do not yet have special bodies exclusively occupied with space activities; and was the case for the others indeed until the very creation of such a body. For example, in West Germany until 1989 space activities were conducted under the auspices of the Federal Ministry of Research and Technology, with the involvement of five other Ministries and the help of the DFLRV⁵ as a coordinating instance.

Sometimes however, state participation in, or control of outer space activities is less clear and less direct. Such is the case for instance with regard to national space agencies. Their place in international

space law, predominantly directed at states as it is, is the subject of this paper; a general overview of the legal position of some European national space agencies will thus be provided. Many of the remarks will be relevant in regard to other, even non-European, space agencies, however for the sake of brevity I will exclude NASA⁶, NASDA⁷ and others.

More precisely, I will concern myself with the French "Centre Nationale des Etudes Spatiales" (CNES)⁸, the "National Board of Space Activities" (NBSA) of Sweden⁹, the "Nederlands Instituut voor Vliegtuigontwikkeling en Ruimtevaart" (NIVR) of the Netherlands¹⁰, the "British National Space Centre" (BNSC)¹¹, the Italian "Agenzia Spaziale Italiana" (ASI)¹² and the "Deutsche Agentur für Raumfahrtangelegenheiten" (DARA) of Germany¹³.

If one tries to define the place of national space agencies in international space law, the first question in this regard turns out to be the definitional one. What do the aforementioned space agencies, diverse as they are in structures, tasks and activities, have in common; what is their common denominator, why are they all national space agencies? In other words, is a national space agency a mere branch of government, entrusted with the task of preparing, coordinating, supporting and executing space policies decided on at government level? Or is it a semi-autonomous body, partly public, partly private in character, operating in the mixed world of state and private enterprise? What, in short, is their legal character with a view to international space law?

It is submitted that concurrently with trying to provide an answer to these questions, it will become clear where the relevance of the definitional problem lies, why it is important to try to define a national space agency as such and how in its turn the analysis of place and role could provide for such a definition. Thus a 'Strange Circle of Reasoning' is created of which Hofstaedter would be proud¹⁴: the two sets of answers bite each other in the tail.

2. Article VI Outer Space Treaty

In this light, this short survey will start with one of the two basic problems which are of paramount relevance for both states and private enterprise activities in space, wherefore it seems logical to consider it relevant for space agencies as well: the problem of responsibility.

In this regard, Article VI of the Outer Space Treaty provides for responsibility for compliance with space law by stating that the state is responsible for national activities¹⁵, whether carried out by governmental agencies or non-governmental entities¹⁶. In the latter case, this responsibility is further elaborated upon by the duty of authorization and continuing supervision by the appropriate state¹⁷.

The question thus automatically arises: is a national space agency a government agency under the terms of Article VI? This is not a superfluous question, as it may seem at first instance, nor is it a question to be answered without a need to go into some detail. If an agency, because of private legal elements in its operational mode or organizational structure, is to be considered as a non-governmental entity, it becomes important to discover whether the state in question has taken measures providing for such authorization and supervision. If not, if the agency is a governmental agency in the sense of Article VI; is this fact enough for international responsibility to be taken care of domestically?

It then boils down to the question to be asked first: what is a government agency? As far as I know, no definition has been provided for this term as of yet, so I take the liberty of providing

my own. I hold a government agency to be a structured body for policy and execution concerning a well defined field or subject-matter, if it is integrated for the full 100% into the bureaucratic structure of government. This applies *inter alia* to its decision making process, its personnel policies and hierarchy, and its financial household, three criteria providing for a useful tool for distinction.

Such a definition would, in case of application to national space agencies, fit logically into Article VI, because a government agency thus by definition would be under full legal authorization and supervision of its government. No explicit mentioning under Article VI of such a duty would be necessary for them.

In practice however, most national space agencies show a somewhat hybrid structure. A short overview of the space agencies under consideration will immediately clarify this; a much more detailed analysis will be needed however in order to come to a definitive conclusion in respect of each specific agency.

Financially speaking, those space agencies are sometimes completely dependent on government budgets. This holds good for instance for the BNSC¹⁸. Those space agencies created 'merely' to play roles such as the Dutch NIVR, promoting the aerospace sector and advising government on air and space questions¹⁹, or, originally at least, the Swedish NBSA, registering and controlling national space activities²⁰, no doubt depend solely on government budgets also.

More interesting in this regard however are quite a number of other cases. The ASI is called a "half-autonomous" agency, "with its own budget", spreading its assignments on a "private legal basis"; the funds however deriving directly from the Ministry of Finance²¹, to be used according to the National Space Plan²². The DARA is organized as a private firm, but with the Federal Government as sole shareholder²³. The CNES, a "public corporation"²⁴, already obtains some autonomous income from its operation of the Kourou launching base in French Guyana²⁵, whereas on the other side of the budget it is a large shareholder in Arianespace, owning 34% of its shares, and responsible for the realization of its launches.²⁶

As to its personnel, it usually can not be seen as such as being totally comprised by government officials. The BNSC for instance not only employs government officials, but 'representatives' of industry firms as well²⁷. DARA's personnel expressly is to be classified as non-governmental²⁸, and it seems, that the same holds good for ASI's personnel by way of detachment to a large extent from government²⁹. CNES's highest organ, the Conseil d'Administration, even comprises 11 persons (among 18), not necessarily being government officials in any sense of the word³⁰. Likewise, NIVR's Board not only comprises government representatives, but those of industry and scientific research institutes as well³¹.

On the other hand, some government officials almost invariably occupy usually important positions within the agencies; in fact, its highest organs are either consisting of government ministers or their representatives, or responsible to them. The ASI falls within the control of the Italian Minister for Research and Technology, whilst international activities need the consent of the Ministry of Foreign Affairs as well³². The CNES is subordinated to the French Ministries of Research and Industry, with other Ministries being involved also by way of the Conseil d'Administration. Likewise, the bodies ultimately shaping DARA's actions are comprised of Ministers (with the Federal Chancellor as chairman) respectively State-secretaries of 8 Ministries³³.

Thus, its decision making process usually is an amalgam of governmental and non-governmental elements, or to use other words, of public and private elements. The CNES thus should be seen as "un établissement public national à caractère scientifique et technique, industriel et commercial", which means that it is to function, relative to the state, "de manière autonome, mais pour son compte et sous son contrôle"³⁴. The NBSA seems to be a government agency, at least when its legal basis is analyzed, taking care of Swedish liability-obligations under space law; on the other hand functioning relatively autonomous, being merely obliged to "consult" or "inform" (other) branches of government³⁵, and nowadays even on itself involved in the German Saenger project

concerning a hypersonic plane³⁶.

In summary, this structure takes care of the authorization-and-supervision-duty, provided by Article VI in the case of non-governmental entities, to a, for the time being, satisfying extent. As far as this is provided for by implication through in-built controls, the agency in question may be considered a 'governmental agency' in the sense of Article VI, as far as explicit dependence on certain parts of government is the case, the agency may be considered a 'non-governmental' agency. Most European agencies, as shown, are hybrid structures, with both implicit and explicit controls present, and therefore would seem to fall within both categories.

As the distinction of Article VI between 'government agencies' and 'non-governmental entities' however to my mind is absolute³⁷, where the latter are to be subjected to government control and authorization but no such duty is formulated in regard of the former, supporting my definition of government agency as provided, only integration of the agency in the bureaucratic structure of government to the full should be considered to make it a government agency. As most agencies under consideration do not qualify as such, they are not 'government agencies' under Article VI; explicit control mechanisms which would have been superfluous under Article VI if the agency in question were to be considered as a government agency under its terms, are provided each time - and, as stated, for the moment must be deemed to be sufficient.

Perhaps few 'national legal gaps' will therefore appear in those respects as a result of international responsibility arising precisely because of those explicit control mechanisms. However, once the above qualification of a space agency is accepted, the necessity will arise each time in regard of its activities to clarify whether the responsibility of the state is taken care of, nationally, by either implicit controls - after all present in all cases of national space agencies as well - or explicit controls, or whether it will have to be taken care of by a new measure providing for explicit control. This problem will gain relevance in view both of the ongoing commercialization and privatization of space activities, and of the measure of internationalization, which almost of necessity will influence national space agencies' operations of whatever kind as well. CNES's semi-commercial operation of Kourou already provides an example in point. This trend should not be allowed to lead to a lessening in fact of governmental authorization and supervision by imperceptible advances of non-governmental elements.

Furthermore, the fact that a distinction has been drawn through the above analysis between governmental and non-governmental entities with regard to national space agencies, may already be of relevance in respect of the problems of state immunity³⁸.

3. Article VII Outer Space Treaty

For the moment, let us however turn to that other basic space law problem, always immediately springing to mind in regard of especially private enterprise active in outer space, that of liability. The remarks made at the end of the previous paragraph namely especially hold good when semi-autonomous agencies, partly governmental but therefore according to my definition non-governmental entities under Article VI, become involved in the launching of space objects. Such involvement of course may trigger application of Article VII of the Outer Space Treaty and the relevant Articles of the Liability Convention³⁹. Articles II and III of the Liability Convention for example apportion liability for damage to the launching state.

When a national space agency launches a space object, while being a real government agency, it is the state itself which launches, and no problems of attribution will arise⁴⁰. If it is not a real government agency however, under whatever definition, problems do arise. The state of the national space agency in question could then be considered liable only under four headings providing for such attribution.

Two headings are applicable to begin with if the launch was seen as being either performed from the state's territory or from its facilities⁴¹. In a case of a national space agency, this would be quite possible, perhaps even usual, but it would by no means be automatic.

So far, none of the space agencies seemed to have undertaken such activities; what however if the CNES for instance is granted the competence by the French government to take care of French participation by way of ESA in the International Space Station to be built in upcoming years?⁴² After all, this September Sweden's NBSA has agreed to spend some 5,4 million US dollars in the upcoming years on hypersonic aerodynamics for the German project on "Saenger", the hypersonic plane to be developed⁴³. And one month later, Italy's ASI made a bid to participate in the same Saenger project for a 15-20% share of the preliminary work (worth approximately 36-48 million US dollars), to be precisely, on its design and propulsion system⁴⁴.

A third possibility of a heading attributing activities of a space agency to 'its' state for the purpose of liability would seem to lie in the launching being seen as a state activity yet⁴⁵. This however was excluded by my very hypothesis of the space agency being a non-governmental agency under the terms of Article VI. Unless the rather strained construction would be endorsed that enough 'state elements', however defined, are present in the space agency defined as non-governmental to yet define its activities as state activities, and presuming of course the first two headings are not applicable either, this leaves us with only one option, that of the fourth heading possibly applicable.

A state then could still be held liable for damage arising out of a launch where its space agency was involved, even if it would be no government agency and neither the state's territory nor its facilities would have been used for the launch, if the launch could be seen as being procured by the state⁴⁶. This in fact encompasses two possibilities: the state in question financing the particular launch in question, which will often be the case but by no means would be automatically so, or the agency in question, no matter how it functions or operates, still being financially dependent on the state in question.

In regard of the first, we have already seen a possibility arising e.g. for the CNES, to take part financially in launches of Arianespace's rockets, with funds not derived from government incomes⁴⁷. Similar possibilities exist also for the NBSA and the ASI in regard of the Saenger plane⁴⁸.

Once therefore such a space agency should not be seen as a government agency any longer, the question as to liability may have become paramount. General international legal principles might apply to fill the legal gap, such as that of 'due care' responsibility applied to liability⁴⁹. However, such use of general principles of course may entail other difficulties, especially as to whether monetary compensation is the right form of reparation for violation of a due care obligation⁵⁰. This is not the right place to go into this problem any further however.

The latter possibility in regard of the fourth heading, relating to structural financing, applies to all national space agencies dealt with, though not always to the full - as, again, the example of at least the CNES shows. So, the conclusion must then be that, despite the fact that according to the definition provided before few space agencies are government agencies under the terms of Article VI, problems of attribution in regard of damage under Article VII will not arise as long as the space agency under consideration is at least partly dependent on the state in question in a structural way, because this makes that state liable in the last resort as a state (at least partly) procuring the launching.

If on the other hand the structural financial dependence of the agency would disappear, still presuming it of course to be a non-governmental entity in the sense of Article VI as well, the agency for all practical purposes would have become a private enterprise - perhaps exploiting a public use facility within a state-provided legal framework, but a private enterprise nevertheless. After all, more often than not private enterprise in space enjoys non-structural financial government support, like subsidies and financial guarantees of an ad hoc-character, as well.⁵¹

Thus a second borderline has been drawn with regard to national space agencies, this time dividing the latter from private enterprises. Again, for the moment such a borderline may seem academic, but it is submitted that this will be increasingly less so to the extent that ongoing trends of commercialization, privatization and internationalization will continue to influence national space

agencies as well. It will be necessary to keep an eye on this development, if only in order not to allow the borderline to be passed without notice, where that might entail serious legal gaps as to the attribution of liability. Again furthermore, the borderline thus elaborated has other consequences emanating from a general international legal problem.

4. The question of state immunity

Both borderlines as defined before namely may become relevant in regard of the question of state immunity. 'State immunity' is a doctrine of general public international law, which forms part of the body of space law as far as the latter does not deride from the former⁵². Particularly in the case of national space agencies this sounds logical. While from time to time being active in outer space, they are still national entities one way or another constituted according to domestic legislation and earthbound in most of its material aspects, such as its activities, the presence of its personnel and capital goods etcetera. Where such space agencies moreover become involved most of the time merely in earthbound stages of a project, such as not only government policy-preparation, -coordination and -execution, but also such as NBSA's work on hypersonic aerodynamics for the Saenger project may amount to⁵³, will it not become even harder to apply space law to the complete exclusion of general international law? Perhaps its actions and activities should even be considered primarily, or at least on an equal footing, as actions and activities of other (semi-)public bodies in other sectors of the (international) economy, falling under general public international law.

It will be clear at any rate, that a doctrine like that of state immunity indeed can be deemed to be applicable to space agencies, under the relevant circumstances. This doctrine excludes acts of a state for that very reason from the jurisdiction of courts. Nowadays, the relative version of the theory rules supreme: only those acts done in its very capacity as a state, the so-called 'acta jure imperii', are thus excluded from jurisdiction. So-called 'acta jure gestionis', where the state acts in a private legal capacity, are not excluded from jurisdiction.⁵⁴ The question then arising of course is, what criteria are to be used to distinguish the one from the other? Two main trends arose in this respect. According to one line of thought, it was the nature of the activity concerned that was to determine its character as 'jure imperii' or 'jure gestionis'; according to others, it was the purpose of the activity which was the essential criterion. Both authors and courts differed and keep on differing in their choices.⁵⁵

The relevance of this doctrine of general international law for the legal question concerning national space agencies, viz. the questions concerning their legal definitions, relates to the definitional problems in a very direct way. In as far as the first borderline is concerned, the problem of distinguishing 'acta jure imperii' from 'acta jure gestionis' becomes relevant in the following manner.

Is the nature of the agency's activity to be considered as dividing 'imperii' from 'gestionis', no difference can be discovered between governmental and non-governmental agencies as defined before as such, only between specific activities, which may be considered as either of the two according to their respective nature.

The most that could be said is, that the tendency for activities of a governmental space agency to be governmental in nature will be stronger, than for those of a non-governmental one. In the former case it will be more likely for those agencies to become involved e.g. in military reconnaissance activities, or preparation and coordination, and in some cases execution, of government policies, which by nature must be considered to be 'imperii'-activities⁵⁶, but the borderline is not hard and fast.

So far, it seems most European space agencies are involved in both sorts of activities, albeit to different degrees. The NIVR and BNSC occupy one end of the scale, by mainly being active in preparing government policies, coordinating them and sometimes executing them as well⁵⁷. On the other hand, agencies like the CNES and the ASI are much more involved in activities 'gestionis' by nature, such as tendering or subscribing to certain projects in commercial or semi-commercial modes⁵⁸. In between, for example the NBSA seems to be

moving from the former position to the latter, increasingly becoming involved in commercial enterprises⁵⁹. Governmental agencies in general may become involved in contracting for certain products or services in a purely private manner, as much as, the other way round, agencies non-governmental according to my definition (being, after all, in the case of space agencies still agencies predominantly governmental!) may become involved in activities of a governmental nature. Therefore, in each specific instance it has to be analyzed whether state immunity should apply or not.

Is however the purpose of the activity the test for 'imperii' or 'gestionis', it seems that almost by definition the activities of a governmental agency would become immune from jurisdiction: its very incorporation-to-the-full into the bureaucratic structure of government implies every activity of the agency to be for government purposes, as defined by that same government. It would, then, not make any difference whether the governmental agency so defined would act exclusively as the NIVR and the BNSC do, or would become heavily involved also in commercial and semi-commercial operations such as the CNES and the ASI are⁶⁰. Whether the court of another state would respect such a claim as to immunity in a case pending before it, is of course another matter⁶¹.

In contrast, activities of a non-governmental agency by definition would seem to remain subject to jurisdiction under the purpose-test. By way of the duty to authorize and supervise, as provided for under Article VI Outer Space Treaty, distance and a distinction are created between the state/the government and the space agency, logically leading to the conclusion that the purpose, and the activities of the agency undertaken in order to achieve that purpose, would not qualify for the immunity granted to state activities 'jure imperii'.

A priori, that is; of course special legislation could provide for delegation of a task with a typically governmental character to the agency in question, as some institutional links between government and space agencies in practice have always been provided for, no space agency defined as non-governmental under Article VI is bereft of complete, or even predominating, government control. The circle is closed thereby once more, because the formulation or interpretation of the legal basis or bases of existence of the space agency can constitute for all practical purposes this very same 'special legislation'.

Thus, we arrive at the second borderline defined supra, that between national space agencies and private enterprise, the latter presumed to be structurally independent as to its financial household as a decisive criterion for distinction. Acts of space agencies namely, as shown, could be or become immune, even if they were non-governmental agencies under our definition, both under the nature- and under the purpose-test; whereas acts of private enterprises by definition can never be immune from jurisdiction.

5. Conclusion

However, the doctrinal battle between nature- and purpose-test has not yet been fully consumed⁶². At the same time, to my knowledge no legal battles have been fought out yet concerning immunity questions of national space agencies. Practice thus fails us completely here, and therefore the state of law is still very unclear in this regard.

Perhaps therefore starting at the other side of the problem, as I have tried to do, by looking at the application in practice of the notions of responsibility, liability and state immunity, may help us in this regard. This paper could do no more than provide the general guide-lines; how the borderlines have to be drawn in regard of each specific agency, would apparently depend on the results of detailed analysis of constitutive documents, relevant domestic law, internal rules, modes of operation and the like, and perhaps even of personnel-contracts.

Therefore, although I hesitate to write these words down in a paper for a conference with "Peace and Progress" as its motto, perhaps a few of those old-fashioned battles (in court) would mean a lot of progress in clarification of the legal situation of national

space agencies under international (space) law. At any rate, they would mean a lot of progress in regard of the professional and financial situation of us space lawyers.

Notes

1. Cf. e.g. T.L. Zwaan & W.W.C. de Vries, "Creation and Impact of a European Legal Framework for Space Activities", Proceedings of the Thirty-First Colloquium on the Law of Outer Space, Bangalore, 8-15 October 1988, published Washington, 1989, pp. 198-207; M.G. Bourély, "Les nouvelles relations entre le Canada et l'Agence Spatiale Européenne", Annals of Air and Space Law IX (1984), pp. 201-216; G. Lafferranderie, "The Enlargement of the European Space Agency - Legal Issues", Journal of Space Law 15 (1987), pp. 119-130.
2. Cf. e.g. M.G. Bourély, "Quelques réflexions sur la Commercialisation des Activités Spatiales", Annals of Air and Space Law XI (1986), pp. 171-186; M. Howald, "Private Space Activities and National Legislation", Proceedings of the Thirty-Second Colloquium on the Law of Outer Space, Malaga, 11-15 October 1989, published Washington, 1990, pp. 344-347; H.L. van Traa-Engelman, Commercial Utilization of Outer Space, Legal Aspects, dissertation University of Utrecht, published Alblasserdam, 1989, esp. pp.203-230.
3. See e.g. on EUMETSAT, M.G. Bourély, "EUMETSAT - A New European Space Organization for Cooperation in the Field of Meteorology", Proceedings of the Twenty-Sixth Colloquium on the Law of Outer Space, Budapest, 10-15 October 1983, published New York, 1984, pp. 195-196; on INMARSAT, W.D. von Noorden & P.J. Dann, "Public and Private Enterprise in Satellite Telecommunications: the Example of INMARSAT", Proceedings of the Twenty-Ninth Colloquium on the Law of Outer Space, Innsbruck, 4-11 October 1986, published New York, 1987, pp. 193-197.
4. See in general e.g., Bourély, Annals, 1986; V.S. Vereshchetin, "Interaction of International Space Law and Domestic Law in Space and Time", Proceedings of the Twenty-Third Colloquium on the Law of Outer Space, Tokyo, 21-28 September 1980, published New York, 1981, pp. 209-210; V.D. Bordunov, "Problems of Interaction Between International Outer Space Law and Domestic Law", Proceedings of the Twenty-Seventh Colloquium on the Law of Outer Space, Lausanne, 7-13 October, published New York, 1985, pp. 23-24.
5. "Deutsche Forschungsanstalt für Luft- und Raumfahrt"; see: M. Spude & B. Staudt, "DARA - die neue Deutsche Agentur für Raumfahrtangelegenheiten", Zeitschrift für Luft- und Weltraumrecht 39 (1990), pp. 188-203; at pp. 190-192; W. Finke, "Weltraumpolitik der Bundesrepublik Deutschland", Weltraum und internationale Politik, eds. K. Kaiser & S. von Welck, München, 1987, pp. 279-298, at p. 289.
6. See for NASA e.g. B.I. Edelson, H.S. Kupperman & K.S. Pedersen, "NASA: Twenty-five Years of International Cooperation", Proceedings of the Twenty-Sixth Colloquium on the Law of Outer Space, Budapest, 10-15 October 1983, published New York, 1984, pp. 287-290; S.N. Hosenball, "NASA and the Practice of Space Law", Journal of Space Law, 13 (1985), pp. 1-7.
7. See for NASDA e.g. S. von Welck & S. von Krosigk, Weltraumpolitik Indiens und Japans, Bonn, 1985, pp. 77-78; M. Akiyama, "Activities of the National Space Development Agency of Japan in the Field of Exploration and Use of Outer Space with a Focus on International and Legal Areas", Journal of Space Law 18 (1990), pp. 39-41.
8. Cf. e.g. O. de Saint-Lager, "L'Organisation des Activités Spatiales Françaises: une Combinaison Dynamique du Secteur Public et du Secteur Privé", Annals of Air and Space Law VI (1981), pp. 475-487; M. Hagen, "Weltraumpolitik Frankreichs", Weltraum und internationale Politik, eds. K. Kaiser & S. von Welck, München, 1987, pp. 321-338.
9. Cf. e.g. J. Reifarh, "Nationale Weltraumgesetze in Europa", Zeitschrift für Luft- und Weltraumrecht 36 (1987), pp. 3-16, at p. 5.
10. Cf. e.g. I.H.Ph. Diederiks-Verschoor, "Domestic Law of the Netherlands Regarding Space Activities", Proceedings of the

Twenty-Seventh Colloquium on the Law of Outer Space, Lausanne, 7-13 October 1984, published New York, 1985, pp. 33-34.

11. Cf. e.g. H. Wallace, "Weltraumpolitik Grossbritanniens", Weltraum und internationale Politik, eds. K. Kaiser & S. von Welck, München, 1987, pp. 339-350.

12. Cf. e.g. G.C. Sgrosso, "Establishment of the Italian Space Agency", Proceedings of the Thirty-First Colloquium on the Law of Outer Space, Bangalore, 8-15 October 1988, published Washington, 1989, pp. 162-164; F.J. Mathy, "Weltraumpolitik Italiens", Weltraum und internationale Politik, eds. K. Kaiser & S. von Welck, München, 1987, pp. 351-362.

13. Cf. e.g. Spude & Staudt.

14. See D. Hofstaedter, Gödel, Escher, Bach: an eternal golden braid, New York, 1979.

15. I leave aside here the questions concerning the definition of "national activities" (and the related definitional problem in regard of "appropriate state"), presuming it to be self-evident that activities of national space agencies by definition will be attributed under space law to the states of which they are the national space agencies. See however for a short summary of the various arguments: Van Traa-Engelman, p. 206, and T.L. Zwaan, reviewing this book in Leiden Journal of International Law 3 (1990), pp. 87-90, at p. 88.

16. Article VI, "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies" of 27 January 1967 (hereafter "Outer Space Treaty").

17. See e.g. M.G. Bourély, "National Space Legislation in Europe", Proceedings of the Thirtieth Colloquium on the Law of Outer Space, Brighton, 10-17 October 1987, published Washington, 1988, pp. 197-202, at pp. 197-198; also Howald. In Sweden for example, interestingly enough those questions of responsibility and liability were (supposed to be) solved by the very creation of the NBSA; see Reifarh.

18. See Wallace, p. 346.

19. See Diederiks-Verschoor, p. 33.

20. Cf. Sec. 2, 4, Decree on Space Activities, in: Reifarh, at p. 12.

21. See Mathy, pp. 357-359. Cf. however A. Politi, "Italy's Space Plans Face Lira Squeeze", Space News 1 (1990), no. 43, 5-11 November 1990, p. 26, speaking of "some spare funds" and suggesting fargoing autonomy as to detailed allocation of funds.

22. See Sgrosso, p. 162.

23. See Spude & Staudt, pp. 193-194.

24. M.G. Bourély, "Institutional Arrangements for Space Cooperation in Europe", Proceedings of the Twenty-Fourth Colloquium on the Law of Outer Space, Rome, 6-12 September 1981, published New York, 1982, pp. 159-167, at p. 161.

25. Of the 9,41 billion French francs constituting the 1990 budget of CNES, 7,19 billion came from the state's budget, 2,22 billion were counted as 'own resources', including 0,65 billion from the exploitation of Kourou; see La lettre du CNES, no. 129, 20 August 1990, pp. 2-5. The 1989 amounts were 8,08 billion, 6,45 billion and 1,63 billion respectively for the first three categories: the rise of the overall budget was thus divided almost equally by a rise in 'government support' and 'commercial income'; the latter, being much smaller in absolute terms, therefore grew much faster in relative terms. Cf. also Hagen, pp. 329-332.

26. See Hagen, p. 329, and Saint-Lager, p. 483-484. Also Bourély, Proceedings 30th Coll., at p. 202, mentioning the creation by the CNES of some 15 subsidiary companies.

27. See Wallace, p. 345.

28. See Spude & Staudt, pp. 194-195.

29. See Mathy, p. 358.

30. Five of them are to be chosen "for reason of their competencies in the domain of activity of CNES", six others in order only to "represent the personnel of CNES". See Hagen, p. 329. However, Saint-Lager 6 years earlier still only mentioned 14 members, all nominated by the state; p. 477.

31. See Diederiks-Verschoor, p. 33.

32. See Sgrosso, p. 163. Cf. also Politi, p. 26.

33. See Spude & Staudt, pp. 193-194.

34. Saint-Lager, p. 476.

35. See Reifarh, pp. 5, 12, and Sec. 1, 3, Decree on Space Activities; cf. also Bourély, Proceedings 30th Coll., at pp. 199, 202.

36. See *infra*, par. 3.

37. I fully acknowledge the existence as a realistic alternative interpretation of the other possibility, to view the distinction as a relative one. Thus, one could argue that in those aspects where a space agency is acting as a non-governmental entity, supervision and authorization must be taken care of, whereas each time the very same agency is acting as a governmental agency, no such duty is necessary because it would already exist by definition. All this however would not change the basic fact, that with regard to each specific activity analysis would then become necessary in order to establish the status of it under Article VI and the potentially resulting duties. The alternative thus merely phrases the same problems in another way without really changing them, the definitional problem of what a national space agency is would be solved, but would have become meaningless at the same time.

38. See *infra*, par. 4.

39. "Convention on International Liability for Damage Caused by Space Objects" of 29 March 1972 (hereafter "Liability Convention").

40. Cf. also Art. 3(a), 5 ff., Draft articles on State responsibility, International Law Commission, Yb. ILC, 1980, vol. II part 2.

41. Cf. Art. I(c) under (ii), Liability Convention.

42. See P.B. de Selding, "French Space Spending on the Rise", Space News 1 (1990), no. 40, 15-21 October 1990, pp. 3/27, at p. 3; cf. also Bourély, Proceedings 30th Coll., at p. 202 mentioning 3 sub-subsidiaries of the CNES operating in the USA!

43. Cf. P.B. de Selding, "Germany Convinces Sweden to Participate In Saenger Work", Space News 1 (1990), no. 43, 5-11 November 1990, p. 9.

44. See A. Politi, "Italy Bids for Role in German Saenger Project", Space News 1 (1990), no. 43, 5-11 November 1990, pp. 1/28, at p. 28.

45. Cf. the wording of Art. I(c) under (i), Liability Convention: "A State which launches (...) a space object".

46. Cf. again Art. I(c) under (i), Liability Convention.

47. See *supra* at note 25.

48. See *supra* at notes 43 and 44 respectively.

49. Cf. e.g. M.N. Shaw, International Law, 2nd ed., Cambridge, 1986, on the question of reparation for damage, pp. 415-416.

50. Cf. also Artt. 21, 23, Draft articles on State responsibility, International Law Commission, Yb. ILC, 1980, vol. II part 2.

51. Borderline cases however do exist. Are permanent financial guarantees a form of such structural financial dependence? The French government in regard of liability arising for damage caused by Ariane's rockets for instance effectively provides for such guarantees, where insurance for the amounts above 400 million French francs per accident, if damage would be thus serious, is covered by that same government. Cf. e.g. M.G. Bourély, "La Production du Lanceur Ariane", Annals of Air and Space Law VI, 1981, pp. 279-314, at p. 307.

52. Art. III, Outer Space Treaty.

53. See *supra* at note 43.

54. Cf. e.g. I. Sinclair, "The Law of Sovereign Immunity, Recent Developments", Recueil des Cours, Tome 167, 1980 (II), pp. 113-284, at pp. 196-217; H. Steinberger, "State Immunity", Encyclopaedia of Public International Law, Vol. 10, Amsterdam etc., 1987, pp. 428-446; R. Higgins, "Certain Unresolved Aspects of the Law of State Immunity", Netherlands International Law Review 29 (1982), pp. 265-276; also H. Damian, "European Convention on State Immunity", Encyclopaedia of Public International Law, Vol. 10, Amsterdam etc., 1987, pp. 151-155; F.A. Mann, "The State Immunity Act 1978", Further Studies in International Law, Oxford, 1990, pp. 302-325.

55. Cf. Sinclair, esp. pp. 210-213; Steinberger, pp. 438-439; Higgins, pp. 267-269.

56. In as far, of course, as they do not entail concrete activities that also could have been undertaken, in normal circumstances, by private bodies or persons.

57. Cf. e.g. resp. Diederiks-Verschoor, p. 33, and Wallace, pp. 339, 345.

58. Cf. e.g. resp. Saint-Lager, p. 476, and Politi, pp. 1, 26, 28.

59. Compare Reifarh, p. 5, with De Selding, Space News, no. 43.

60. See e.g. *supra* notes 56 and 57.

61. See the literature mentioned at note 54 *supra*.

62. Cf. again the literature mentioned at note 54 *supra*.